INFOBRIEF SRS
Science Resources Statistics

National Science Foundation
Directorate for Social, Behavioral, and Economic Sciences

NSF 09-314
May 2009

S&E Graduate Enrollments Accelerate in 2007; Enrollments of Foreign Students Reach New High

by Laura Burns, Peter Einaudi, and Patricia Green[1]

U.S. enrollment in science and engineering (S&E) graduate programs in 2007 increased by 3.3% over comparable data for 2006. This is the highest annual growth rate since 2002 and is nearly double the 1.7% growth rate seen in 2006. First-time, full-time enrollment of foreign students (the terms *foreign student* and *temporary visa holder* are equivalent in this report) eclipsed its previous high, set in 2001, and total enrollment of temporary visa holders topped its 2003 high.[2] Despite this growth, the proportion of S&E graduate students who are temporary visa holders remained below its peak level, set in 2002, because of growth in the numbers of U.S. citizens and permanent residents pursuing graduate-level study in S&E fields. Changes in enrollment from 2006 to 2007 are shown in table 1 under "2006–07old" for reasons explained below.

The NSF-NIH Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS), which collects these data, was refined in 2007 to improve reporting. New fields were added to the survey, and some fields were reclassified. Because of these changes this InfoBrief presents 2007 data in two ways:

- "2007new" counts report the data as collected using the new methodology
- "2007old" counts reflect the data as they would have been collected in prior years

Current-year discussions in this InfoBrief are based on 2007new data. Differences between prior years and 2007 are based on 2007old data, and trends are presented this way. Survey changes and impacts on data collection are discussed in detail in the section "Survey Changes and Comparative Analysis."

Enrollment Status and Demographic Characteristics

Graduate Students

Current Year. Graduate S&E enrollment reached 516,199 in 2007 (table 1, 2007new). Of these students, 72% were enrolled full-time, 56% were men, and 71% were U.S. citizens or permanent residents. Of the U.S. citizens and permanent residents, 67% were classified as white, non-Hispanic students.

Among U.S. citizens and permanent residents, men and women were enrolled in similar proportions (52% men, 48% women). However, among temporary visa holders, nearly twice as many men (66%) were enrolled as women (34%).

Trends. Enrollment of graduate students in S&E fields has increased each year from 2000 to 2007 (table 1). The 3.3% increase in enrollment from 2006 to 2007old is lower than the growth seen at the start of the decade

TABLE 1. Graduate enrollment in science and engineering fields, by citizenship, enrollment status, sex, and race/ethnicity, and S&E postdoctoral appointees by citizenship: 2000–07

Characteristic	2000	2001	2002	2003	2004	2005	2006	2007old[a]	2007new[a]	% change 2006–07old	% difference 2007old–new
S&E graduate enrollment	413,536	429,229	454,834	474,645	475,873	478,275	486,287	502,375	516,199	3.3	2.8
Full time	291,355	304,021	325,472	339,028	340,529	341,742	349,802	362,976	371,542	3.8	2.4
First time	78,332	82,411	86,827	89,331	86,565	89,038	94,413	98,205	100,990	4.0	2.8
Other	213,023	221,610	238,645	249,697	253,964	252,704	255,389	264,771	270,552	3.7	2.2
Part time	122,181	125,208	129,362	135,617	135,344	136,533	136,485	139,399	144,657	2.1	3.8
Male	243,057	251,810	266,217	276,248	274,008	271,967	275,181	284,080	288,926	3.2	1.7
Female	170,479	177,419	188,617	198,397	201,865	206,308	211,106	218,295	227,273	3.4	4.1
U.S. citizens and permanent residents											
S&E graduate enrollment	290,651	294,608	309,119	327,181	332,022	338,513	343,603	353,142	365,091	2.8	3.4
Full time	185,613	188,135	200,097	212,855	217,345	220,842	225,338	233,343	240,319	3.6	3.0
First time	46,301	48,207	54,625	59,649	58,853	60,157	60,978	62,009	64,284	1.7	3.7
Other	139,312	139,928	145,472	153,206	158,492	160,685	164,360	171,334	176,035	4.2	2.7
Part time	105,038	106,473	109,022	114,326	114,677	117,671	118,265	119,799	124,772	1.3	4.2
Male	156,975	157,945	164,891	174,818	176,297	177,900	179,783	184,498	188,642	2.6	2.2
Female	133,676	136,663	144,228	152,363	155,725	160,613	163,820	168,644	176,449	2.9	4.6
White, non-Hispanic	205,569	206,018	213,135	222,674	224,850	225,776	227,993	232,043	240,204	1.8	3.5
Asian/Pacific Islander	24,998	26,494	29,229	31,786	30,645	30,574	30,179	31,279	31,897	3.6	2.0
Black, non-Hispanic	20,834	21,455	22,668	24,174	24,624	25,248	25,664	26,565	27,637	3.5	4.0
Hispanic	17,203	17,974	19,634	21,241	22,212	23,387	24,140	25,032	25,739	3.7	2.8
American Indian/ Alaska Native	1,602	1,683	1,734	1,879	1,848	1,958	2,112	2,168	2,262	2.7	4.3
Other/unknown/ multiracial	20,445	20,984	22,719	25,427	27,843	31,570	33,515	36,055	37,352	7.6	3.6
Temporary visa holders											
S&E graduate enrollment	122,885	134,621	145,715	147,464	143,851	139,762	142,684	149,233	151,108	4.6	1.3
Full time	105,742	115,886	125,375	126,173	123,184	120,900	124,464	129,633	131,223	4.2	1.2
First time	32,031	34,204	32,202	29,682	27,712	28,881	33,435	36,196	36,706	8.3	1.4
Other	73,711	81,682	93,173	96,491	95,472	92,019	91,029	93,437	94,517	2.6	1.2
Part time	17,143	18,735	20,340	21,291	20,667	18,862	18,220	19,600	19,885	7.6	1.5
Male	86,082	93,865	101,326	101,430	97,711	94,067	95,398	99,582	100,284	4.4	0.7
Female	36,803	40,756	44,389	46,034	46,140	45,695	47,286	49,651	50,824	5.0	2.4
S&E postdoctoral appointees	30,224	30,196	31,937	33,666	34,065 r	34,456	34,895 r	35,894	36,223	2.9	0.9
U.S. citizen or permanent resident	12,627	12,073	13,524	13,542	13,969 r	14,078	14,117 r	14,903	15,107	5.6	1.4
Temporary visa holder	17,597	18,123	18,413	20,124	20,096 r	20,378	20,778	20,991	21,116	1.0	0.6

r = data significantly revised; replaces previously published data.

S&E = science and engineering.

[a] In 2007 fields were added to survey, some surveyed fields were reclassified, and survey was redesigned to improve reporting. "2007new" shows data as collected in 2007; "2007old" shows data as they would have been collected in prior years.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

(2001, 2002, and 2003 saw annual growth rates of, respectively, 3.8%, 6.0%, and 4.4%). In 2007 full-time enrollment grew by 3.8% over 2006, and part-time enrollment grew by 2.1%. The rate of growth in 2007 was slightly greater for women (3.4%) than for men (3.2%) and continued the overall trend toward gender parity.

In 2007 the number of U.S. citizens and permanent residents rose by nearly 10,000 students, an increase of 2.8%. Enrollment of these students increased at a slightly greater rate for women (2.9%) than for men (2.6%). Enrollments by temporary visa holders exceeded the previous high seen in 2003 and grew for both men and women and in all categories of enrollment. The 4.6% growth rate for temporary visa holders from 2006 to 2007 was the highest since 2002, which had a 1-year increase of 8.2%. For foreign students, as with U.S. citizens and permanent residents, women's gains in enrollment from 2006 to 2007 (5.0%) slightly outpaced men's (4.4%), although men were still the clear majority.

Enrollment in S&E fields increased among U.S. citizens and permanent residents from all racial/ethnic groups in 2007. Notably, the number of Asians and Pacific Islanders enrolled in S&E graduate programs grew for the first time since 2003. For all other racial and ethnic minorities, increases in 2007 maintained the yearly growth in S&E enrollment seen since 2000. Even more than the trend toward gender parity, increasing racial and ethnic diversity has represented the largest change in the demographic composition of S&E graduate students in the United States: white, non-Hispanic students accounted for 71% of all U.S. citizens and permanent residents enrolled in 2000, as compared with 66% in 2007.

Postdoctoral Appointees

Current Year. Postdoctoral appointees (postdocs) in S&E fields reached 36,223 in 2007 (table 1, 2007new). In contrast to graduate student enrollments, where U.S. citizens and permanent residents predominate, temporary visa holders constitute the majority of postdoctoral appointments (58%).

Trends. The number of postdocs in 2007 increased 2.9% over 2006, and the rate of increase was substantially higher for U.S. citizens and permanent residents (5.6%) than for temporary visa holders (1.0%) (table 1, 2006–07old). The number of postdocs has grown every year except 2001, and annual rates of increase have ranged from 1.1% in 2005 to 5.8% in 2002.

Field of Study

Current Year

S&E graduate programs enrolled 516,199 students in 2007 (table 2, 2007new). Of these students, 74% were enrolled in science fields and 26% were enrolled in engineering fields. The science fields reporting the largest numbers of graduate students remained unchanged from 2006: social sciences, biological sciences, psychology, and computer sciences. Combined, these fields accounted for 74% of all graduate students in science in 2007. Electrical, mechanical, civil, and industrial engineering were the largest engineering fields, together accounting for 68% of graduate students in engineering.

Trends

In 2007 overall S&E graduate enrollment grew by 16,088 students: 8,874 in science and 7,214 in engineering (table 2, 2007old). Although the sciences added more students in absolute numbers, the annual growth rate in 2007 was substantially higher in engineering fields (5.9%) than in science fields (2.4%).

Science enrollment has grown every year between 2000 and 2007. Within science, the fields sociology, other social sciences, and the history and philosophy of science showed the greatest growth rates from 2006 to 2007. Psychology, biological sciences, and other social sciences exhibited the largest growth in absolute numbers. Enrollment in computer sciences grew by 2.7%, the first increase since 2002, and the biological, mathematical, and physical sciences each posted a 7th straight year of growth (2000–07). Although some science fields did show enrollment decreases in 2007, the declines were modest.

In 2007 all engineering subfields grew, with civil engineering and other engineering increasing by more than 10%. Biomedical engineering continued to be one of the fastest-growing engineering fields and has more than doubled in size since 2000. Overall, engineering enrollment expanded for a second straight year following

TABLE 2. Graduate enrollment in science and engineering fields, by field: 2000–07

Field	2000	2001	2002	2003	2004	2005	2006	2007old[a]	2007new[a]	% change 2006–07old	% difference 2007old–new
All science and engineering	413,536	429,229	454,834	474,645	475,873	478,275	486,287	502,375	516,199	3.3	2.8
Science	309,424	319,736	335,166	347,268	352,307	357,710	363,246	372,120	384,523	2.4	3.3
Agricultural sciences	12,023	12,235	12,698	13,197	13,445	13,123	13,016	13,222	13,528	1.6	2.3
Biological sciences	56,282	57,639	61,088	64,701	66,565	68,479	69,941	71,663	71,932	2.5	0.4
Communication[a]	ne	ne	ne	ne	ne	ne	ne	ne	7,303	-	-
Computer sciences	47,350	52,196	55,269	53,696	50,016	47,978	47,653	48,959	48,246	2.7	–1.5
Earth, atmospheric, and ocean sciences	13,941	13,841	14,240	14,620	15,131	14,836	14,920	14,675	14,100	–1.6	–3.9
Family and consumer science/human science[a]	ne	ne	ne	ne	ne	ne	ne	ne	2,780	-	-
Mathematical sciences	15,650	16,651	18,163	19,465	19,931	20,210	20,815	21,335	20,975	2.5	–1.7
Multidisciplinary/ interdisciplinary studies[a]	ne	ne	ne	ne	ne	ne	ne	ne	4,484	-	-
Neuroscience[a]	na	na	na	na	na	na	na	na	1,584	-	-
Physical sciences	30,385	31,038	32,341	34,298	35,761	36,375	36,901	37,111	36,824	0.6	–0.8
Psychology	50,466	50,454	51,152	52,162	54,126	57,282	57,653	60,284	59,617	4.6	–1.1
Social sciences	83,327	85,682	90,215	95,129	97,332	99,427	102,347	104,871	103,150	2.5	–1.6
Agricultural economics	2,079	2,161	2,187	2,318	2,195	2,127	2,158	2,126	1,989	–1.5	–6.4
Anthropology	7,626	7,491	7,481	7,789	7,826	7,750	8,150	8,099	8,129	–0.6	0.4
Economics	10,748	11,408	12,009	12,316	12,318	11,805	12,132	12,328	12,597	1.6	2.2
Geography	4,036	4,304	4,383	4,721	4,809	4,800	4,750	4,660	4,660	–1.9	0.0
History/philosophy of science	532	571	663	737	994	965	968	1,119	1,054	15.6	–5.8
Linguistics	2,674	2,744	2,875	3,028	2,941	3,187	3,074	3,076	2,879	0.1	–6.4
Political science	31,131	31,805	34,934	36,880	39,023	40,780	41,784	41,854	41,349	0.2	–1.2
Sociology	8,652	8,812	8,946	9,127	8,874	9,018	9,035	9,734	9,642	7.7	–0.9
Sociology/anthropology	745	808	719	773	839	848	837	831	682	–0.7	–17.9
Other social sciences	15,104	15,578	16,018	17,440	17,513	18,147	19,459	21,044	20,169	8.1	–4.2
Engineering	104,112	109,493	119,668	127,377	123,566	120,565	123,041	130,255	131,676	5.9	1.1
Aerospace engineering	3,407	3,451	3,685	4,048	4,089	4,170	4,482	4,616	4,616	3.0	0.0
Architecture[a]	na	na	na	na	na	na	na	na	4,601	-	-
Biomedical engineering	3,197	3,599	4,338	5,301	5,807	6,067	6,482	6,881	6,904	6.2	0.3
Chemical engineering	7,056	6,913	7,414	7,516	7,452	7,173	7,261	7,383	7,584	1.7	2.7
Civil engineering[a]	16,451	16,665	17,713	18,890	18,561	18,114	17,802	19,867	16,071	11.6	–19.1
Electrical engineering	33,611	36,100	39,948	41,763	38,995	37,450	38,265	40,207	40,588	5.1	0.9
Industrial engineering	12,119	12,940	14,033	14,313	13,852	13,650	13,829	14,290	14,474	3.3	1.3
Mechanical engineering	15,235	15,852	17,139	18,393	17,852	17,373	17,919	18,366	18,347	2.5	–0.1
Metallurgical/materials engineering	4,377	4,721	4,992	5,131	5,059	5,160	5,268	5,365	5,314	1.8	–1.0
Other engineering	8,659	9,252	10,406	12,022	11,899	11,408	11,733	13,280	13,177	13.2	–0.8

na = not applicable; data were not collected at this level of detail. ne = not eligible; data were not collected for this field before 2007.

[a] In 2007 fields were added to survey, some surveyed fields were reclassified, and survey was redesigned to improve reporting. “2007new” shows data as collected in 2007; “2007old” shows data as they would have been collected in prior years. Science fields "communication," "family and consumer science/human science," and "multidisciplinary/interdisciplinary studies" are new to survey; these data may have been reported under other fields before 2007. “Neuroscience” is a separate science field in 2007new; most of these data were reported under health field “neurology” in 2007old and prior years. "Architecture" is a separate engineering field in 2007new; most of these data were reported under "civil engineering" in 2007old and prior years.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

2 years of declining enrollment. Engineering enrollment since 2000 has risen, fallen, and risen again in step with the fluctuation of enrollment of temporary visa holders (figure 1). With the exception of the period 2001–03, when increasing numbers of U.S. citizens and permanent residents enrolled in engineering, most of the changes in engineering enrollment have come from changes in foreign enrollment.

First-Time, Full-Time Enrollment

Current Year

In 2007 U.S. citizens and permanent residents dominated first-time, full-time enrollments in all science fields except computer science, where 67% of these students were temporary visa holders (table 3, 2007new). In the engineering fields, 57% of first-time, full-time students held temporary visas, and 43% were U.S. citizens or permanent residents.

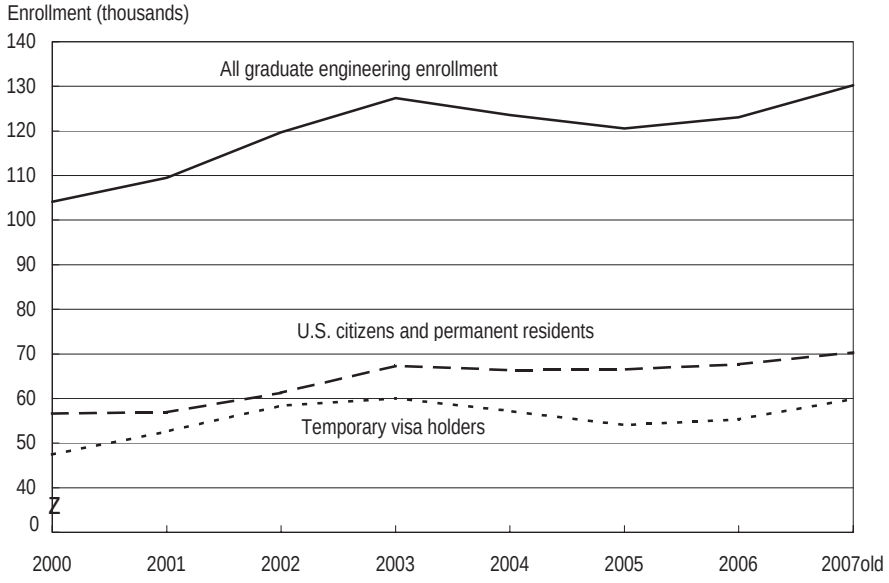
Trends

Among first-time, full-time graduate students, enrollment of temporary visa holders increased at a greater annual rate in 2007 (8.3%) than did that of U.S. citizens and permanent residents (1.7%) (table 3). The growth in the number of temporary visa holders was especially pronounced in computer science and in engineering, each about 12%. These increases follow growth of more than 20% in 2006. Enrollments in all S&E fields, with the exception of computer science, grew among U.S. citizens and permanent residents in 2007.

Survey Changes and Comparative Analysis

The GSS counts graduate students enrolled and postdocs employed in U.S. academic institutions. Data were collected from 12,629 organizational units (departments, programs, research centers, and health-care facilities) at 582 institutions of higher education in the

FIGURE 1. Graduate enrollment in engineering, by citizenship: 2000–07old



SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

TABLE 3. First-time, full-time graduate enrollment in science and engineering fields, by field and citizenship: 2005–07

	U.S. citizens and permanent residents					Temporary visa holders				
Field	2005	2006	2007old[a]	2007new[a]	% change 2006–07old	2005	2006	2007old[a]	2007new[a]	% change 2006–07old
All science and engineering	60,157	60,978	62,009	64,284	1.7	28,881	33,435	36,196	36,706	8.3
Science	49,252	49,231	50,005	52,017	1.6	17,413	19,306	20,382	20,708	5.6
Agricultural sciences	1,828	1,764	1,837	1,848	4.1	432	442	476	508	7.7
Biological sciences	9,925	9,946	10,230	10,507	2.9	2,993	3,109	3,255	3,242	4.7
Communication[a]	ne	ne	ne	1,229	-	ne	ne	ne	302	-
Computer sciences	3,632	3,382	3,077	3,034	–9.0	4,626	5,601	6,275	6,222	12.0
Earth, atmospheric, and ocean sciences	2,270	2,289	2,364	2,271	3.3	488	506	497	478	–1.8
Family and consumer science/ human science[a]	ne	ne	ne	456	-	ne	ne	ne	36	-
Mathematical sciences	2,561	2,522	2,629	2,561	4.2	1,635	1,820	1,966	1,871	8.0
Multidisciplinary/ interdisciplinary studies[a]	ne	ne	ne	584	-	ne	ne	ne	187	-
Neuroscience[a]	na	na	na	180	-	na	na	na	93	-
Physical sciences	4,138	4,045	4,146	4,089	2.5	2,519	2,581	2,641	2,622	2.3
Psychology	9,800	9,645	9,985	9,861	3.5	558	579	639	615	10.4
Social sciences	15,098	15,638	15,737	15,397	0.6	4,162	4,668	4,633	4,532	–0.7
Engineering	10,905	11,747	12,004	12,267	2.2	11,468	14,129	15,814	15,998	11.9

na = not applicable; data were not collected at this level of detail. ne = not eligible; data were not collected for this field before 2007.

[a] In 2007 fields were added to survey, some surveyed fields were reclassified, and survey was redesigned to improve reporting. “2007new” shows data as collected in 2007; “2007old” shows data as collected in prior years. Science fields "communication," "family and consumer science/human science," and "multidisciplinary/interdisciplinary" studies are new to survey; these data may have been reported under other fields before 2007. Neuroscience is a separate science field in 2007new; most of these data were reported under health field "neurology" in 2007old and prior years.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering.

United States, Puerto Rico, and Guam. Of the organizational units surveyed, 97.5% responded.

The information reported in the 2007 GSS is different from previous years in the following ways:

- The fields communication, family and consumer science/human science, and multidisciplinary/interdisciplinary studies were added to the survey. Some of these data may have been reported under other fields before 2007.

- The previously surveyed fields architecture and neuroscience were reclassified. Architecture, previously reported under civil engineering, is now reported as a separate engineering field. Neuroscience, previously reported under health, is now reported as a field of science.

- Organizational units were updated. New survey procedures helped respondents identify all GSS-eligible organizational units. Survey respondents were asked to review and update each organizational unit’s assigned field of study. As a result, survey respondents reported students and postdocs in some units in different fields in 2007 than they had in the past.

Counts reported under 2007new reflect data as they were collected in 2007; 2007old counts reflect data as they would have been collected in prior years. To derive counts for 2007old data, all organizational units reported in the 2006 data collection that were retained in 2007 were categorized by the 2006 field rather than the field assigned by survey respondents in 2007. Organizational units reported for the first time by survey respondents in 2007 were categorized by the field assigned by the respondent, with the following exceptions:

- Communication, family and consumer science/human science, and multidisciplinary/interdisciplinary

studies units; these units were not included in 2007old because the fields were not surveyed in 2006.

- Neuroscience units; these units were not included in 2007old for S&E fields because neuroscience was a health field in the 2006 GSS classification scheme, and this InfoBrief discusses S&E fields.

- Architecture units; these units were included in 2007old under civil engineering, in keeping with the 2006 GSS classification scheme.

S&E Enrollment, Overall and by Field

The methodological changes described above and reflected in 2007new added 13,824 S&E graduate students, a 2.8% increase over the 2007old count (table 1). The addition of units within the three newly eligible science fields (communication, family and consumer science/human science, and multidisciplinary/interdisciplinary studies) and neuroscience accounts for the majority of this difference. A total of 12,413 of the 16,151 graduate students reported in these four fields were associated with units not reported in 2006.[3] These 12,413 students account for 90% of the difference in overall S&E enrollment counts seen between 2007old and 2007new.

The remaining difference in overall S&E enrollment between 2007old and 2007new is due to survey respondents' review of the field assignments of their organizational units and resulting changes in reporting. The net impact of changes in units' field assignments (recoding) from S&E to health (and vice versa) is an additional enrollment of 1,411 students in S&E fields in 2007new.

In tables 1 and 2, the column labeled "Percent difference 2007old–new" shows the net effects of the changes to the GSS instituted in 2007. With the exception of the four new science fields, differences between the old and new 2007 counts within fields are entirely accounted for by the recoding of units from one field to another by survey respondents. Fields with fewer graduate students in 2007new than 2007old had a net loss due to unit recoding; fields with a greater number had a net gain.

Architecture, formerly included in civil engineering, was given its own engineering category in 2007. The vast majority of architecture graduate students reported in 2007 (3,796 of 4,601) were associated with civil engineering units in 2006, which explains the marked decrease (−19.1%) in civil engineering graduate students. The small field of sociology/anthropology had a net loss of 149 students (−17.9%) due to the recoding of three units.

Demographic Characteristics

The methodological changes also influenced the demographic composition of graduate students enrolled in S&E fields. As seen in table 1, the new methodology increased the number of women reported in S&E fields by 4.1%, as compared with a 1.7% increase in the number of men reported. In contrast to the total S&E graduate population, the majority of graduate students in the three newly eligible fields and neuroscience are women. Because these four fields represent a small subset of all S&E fields, the overall proportion of women changed only slightly; 44.0% of students reported in 2007new were women, as compared with 43.5% of students counted in 2007old.

Communication, family and consumer science/human science, and multidisciplinary/interdisciplinary studies have a much higher percentage of part-time students than do S&E fields overall. The addition of these fields explains the greater impact of the methodology on part-time enrollments (3.8%) than on full-time enrollments (2.4%). Neuroscience has a dramatically lower part-time rate. Overall, the proportion of part-time graduate students increased marginally, from 27.8% to 28.0%, with the addition of these fields.

Data Availability

This publication provides the first release of data from the fall 2007 NSF-NIH Survey of Graduate Students and Postdoctorates in Science and Engineering. The full set of detailed tables from this survey will be available in the forthcoming report *Graduate Students and Postdoctorates in Science and Engineering: Fall 2007* at http://www.nsf.gov/statistics/gradpostdoc/. Individual detailed tables from the 2007 survey may be available in advance of the full report. For further information, or for details on the survey methodology used, please contact Julia Oliver or Susan T. Hill.[4]

Notes

1. Laura Burns and Peter Einaudi are research analysts and Patricia Green is a program director at RTI International, 3040 Cornwallis Road, P.O. Box 12194, Research Triangle Park, NC 27709-2194.

2. Foreign students are those holding temporary U.S. visas. First-time graduate students are those enrolled for graduate credit for the first time as of fall 2007 at the institution at which they are pursuing a degree; full-time enrollment is defined by each institution's policies and definitions.

3. The other 3,378 students in these four science fields were counted in 2007old; they were in S&E units reported in 2006 that were recoded to these four science fields in 2007.

4. Human Resources Statistics Program, Division of Science Resources Statistics, National Science Foundation, 4201 Wilson Boulevard, Suite 965, Arlington, VA 22230 (Julia Oliver, joliver@nsf.gov, 703-292-7809; Susan T. Hill, sthill@nsf.gov, 207-292-7790).

NSF 09-314